

REMARKS

Claims 1- 8 were pending and remain pending. Claims 5, 8, and the abstract have been amended. Support for the amendments can be found throughout the specification as originally filed. No new matter has been added.

Objections to the Specification

The Examiner has objected to the specification because the abstract exceeds the 250 word limit. Applicants submit that the abstract as amended herein renders this objection moot.

Rejection of Claims 1-8 Under 35 U.S.C. §102(b) over Subramaniam

Claims 1-8 are rejected under 35 U.S.C. §102(b) as being anticipated by WO 97/27821("Subramaniam"). According to the Examiner, "Subramaniam discloses a prosthetic device having a metal material selected from the defined group, a layer corresponding to hybrid material from the defined group and a biomolecule associated therewith."

Applicants respectfully traverse the aforementioned rejection for the following reasons. For a prior art reference to anticipate in terms of U.S.C. §102 a claimed invention, the prior art must teach ***each and every element*** of the claimed invention. *Lewmar Marine v. Barient*, 827 F.2d 744, 3 USPQ2d 1766 (Fed. Cir. 1987).

The present invention, as set forth in independent claims 1 and 8, is directed to a medical prosthetic device or medical implant a metal made of a metal material such as titanium, zirconium, tantalum, hafnium, niobium chromium-vanadium alloy, or alloys thereof. The surface parts of these metal materials are then coated with a layer of hydride material, *e.g.* titanium hydride, zirconium hydride, tantalum hydride, hafnium hydride, niobium hydride and chromium and/or vanadium hydride. ***The hydride is formed during a process such as electrolysis and contains one or more biomolecule substances which are present during the hydride formation process.***

Subramaniam describes an implant having a bio-compatible coating and method for production thereof. The implant is made of a material capable of being oxidized, such as titanium or an alloy thereof. The oxide of the implant is first removed by etching (*e.g.* in an aqueous solution of 4% hydrofluoric acid, 30% nitric acid and 15% sulfuric acid), washed in deionized water without exposing the implant to air/oxygen, introduced in an inert atmosphere, and thereafter transferred into a solution containing an orange coupling agent, such as cystine, organ peroxides, organic sulfoxide, sulfones, or sulfonic acid ***forming an oxidative coupling with the surface.*** (See page 5, line 14 to page 6, line 25). A bioactive agent, such as a growth promoter or heparin, ***is thereafter attached to the coupling agent on the implant surface by a chemical reaction.*** (See page 6, line 36 to page 7, line 7).

Subramaniam *does not teach a hydride layer* nor the formation thereof by electrolysis. Subramaniam further does not teach or suggest the inclusion of a bioactive molecule in such a layer. Subramaniam is merely an example of a method using chemical reactant which is described as prior art in the background section of the present application. Moreover, the bioactive agent of Subramaniam is attached to the implant surface by covalent bonding using a linker molecule. This type of method often leads to undesirable changes in conformation, structure, and biological activity of the bioactive agent. The purpose of the present invention to avoid these drawbacks and provide greater biocompatibility.


The Examiner alleges that claim 8 is a product by process claim and “[t]herefore the product disclosed by Subramaniam and does not require the specific method steps of claim 8.” Applicants respectfully submit that claim 8 is a method claim and not a product by process claim.

For all the foregoing reasons, the claimed invention is not anticipated by, nor rendered obvious by Subramaniam. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C §102(b) be reconsidered and withdrawn.

SUMMARY

In view of the foregoing remarks, reconsideration of the rejections and allowance of all pending claims is respectfully requested. If a telephone conversation with Applicants' Attorney would expedite prosecution of the above-identified application, the Examiner is urged to call the undersigned at (617)-227-7400.

Respectfully submitted,



Merideth C. Arnold
Registration No. 52,568
Attorney for Applicants

LAHIVE & COCKFIELD, LLP
28 State Street
Boston, MA 02109
Tel. (617) 227-7400

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